

What is claimed is:

- 1 1. A method of applying a sprayable liquid coating to a substrate comprising:
 - 2 (a) forming a concentrated solution of an edible polymer and a solvent and
3 transferring said concentrated solution to a high pressure vessel;
 - 4 (b) chilling liquid carbon dioxide CO₂ to a temperature of from about -20°C. to
5 about 10°C.;
 - 6 (c) compressing said chilled CO₂ to a supercritical pressure of from about 1060
7 psi to about 5000 psi;
 - 8 (d) heating the supercritical CO₂ to a temperature of from about 31°C. to about
9 90°C.;
 - 10 (e) transferring the heated supercritical CO₂ to said high pressure vessel;
 - 11 (f) dissolving the heated supercritical CO₂ into said concentrated solution in said
12 high pressure vessel to form a sprayable liquid coating composition, and
 - 13 (g) atomizing said sprayable liquid coating composition onto a substrate.
- 1 2. The method in accordance with claim 1, wherein said edible polymer is selected from
2 the group consisting of edible shellac, orange shellac, dewaxed shellac, bleached shellac, and
3 dewaxed and bleached shellac.
- 1 3. The method in accordance with claim 1, wherein said solvent is selected from the
2 group consisting of ethyl alcohol and isopropyl alcohol.
- 1 4. The method in accordance with claim 1, wherein said concentrated solution
2 comprises from about 45 to about 75 wt.% of edible polymer and from about 25 to about
3 55 wt.% of solvent.
- 1 5. The method in accordance with claim 4, wherein said concentrated solution
2 comprises from about 55 to about 65 wt.% of edible polymer and from about 35 to about 45
3 wt.% of solvent.

1 6. The method in accordance with claim 1, wherein the amount of supercritical carbon
2 dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to
3 less than about 150 cps.

1 7. The method in accordance with claim 6, wherein the amount of supercritical carbon
2 dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to
3 from about 10 to about 100 cps.

1 8. The method in accordance with claim 1, wherein said edible polymer is an edible
2 shellac and said solvent is ethanol.

1 9. The method in accordance with claim 8, wherein said concentrated solution
2 comprises from about 45 to about 75 wt.% of edible shellac and from about 25 to about 55
3 wt.% of ethanol.

1 10. The method in accordance with claim 9, wherein said concentrated solution
2 comprises from about 55 to about 65 wt.% of edible shellac and from about 35 to about 45
3 wt.% of ethanol.

1 11. The method in accordance with claim 9, wherein the amount of supercritical carbon
2 dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to
3 less than about 150 cps.

1 12. The method in accordance with claim 1, wherein said sprayable liquid coating
2 composition is applied to an edible substrate.

1 13. The method in accordance with claim 12, wherein said edible substrate is selected
2 from the group consisting of confections and pharmaceutical tablets.

1 14. A method of applying a sprayable liquid coating composition to a substrate
2 comprising:

- 3 (a) forming a concentrated solution of an edible polymer and a solvent;
4 (b) heating gaseous carbon dioxide CO₂ to a subcritical temperature of from
5 about 20°C. to about 70°C.;
6 (c) passing the heated subcritical CO₂ into a spray nozzle head;
7 (d) transferring said concentrated solution to said spray nozzle head;
8 (e) dissolving the subcritical CO₂ into said concentrated solution in said spray
9 nozzle head to form a sprayable liquid coating composition, and
10 (f) atomizing said sprayable liquid coating composition onto a substrate.

1 15. The method in accordance with claim 14, wherein said edible polymer is selected
2 from the group consisting of edible shellac, orange shellac, dewaxed shellac, bleached
3 shellac, and dewaxed and bleached shellac.

1 16. The method in accordance with claim 14, wherein said solvent is selected from the
2 group consisting of ethyl alcohol and isopropyl alcohol.

1 17. The method in accordance with claim 14, wherein said concentrated solution
2 comprises from about 45 to about 75 wt.% of edible polymer and from about 25 to about 55
3 wt.% of solvent.

1 18. The method in accordance with claim 14, wherein said concentrated solution
2 comprises from about 55 to about 65 wt.% of edible polymer and from about 35 to about 45
3 wt.% of solvent.

1 19. The method in accordance with claim 14, wherein the amount of supercritical carbon
2 dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to
3 less than about 150 cps.

1 20. The method in accordance with claim 19, wherein the amount of supercritical carbon
2 dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to
3 from about 10 to about 100 cps.

1 21. The method in accordance with claim 14, wherein said edible polymer is an edible
2 shellac and said solvent is ethanol.

1 22. The method in accordance with claim 21, wherein said concentrated solution
2 comprises from about 45 to about 75 wt.% of edible shellac and from about 25 to about 55
3 wt % of ethanol.

23. The method in accordance with claim 22, wherein said concentrated solution
comprises from about 55 to about 65 wt.% of edible shellac and from about 35 to about 45
wt.% of ethanol

24. The method in accordance with claim 21, wherein the amount of supercritical carbon dioxide is sufficient to reduce the viscosity of the sprayable liquid coating composition to less than about 150 cps.

25. The method in accordance with claim 14, wherein said sprayable liquid coating composition is applied to an edible substrate.

1 26. The method in accordance with claim 25, wherein said edible substrate is selected
2 from the group consisting of confections and pharmaceutical tablets.

1 27. The method in accordance with claim 14, further comprising adding compressed air
2 to said sprayable liquid coating composition.

1 28 The method in accordance with claim 14, wherein said spray nozzle head is heated.

- 1 29. A method of applying a sprayable liquid coating to a substrate comprising:
- 2 (a) forming a concentrated solution of an edible polymer and a solvent and
3 transferring said concentrated solution to a high pressure vessel;
- 4 (b) chilling liquid carbon dioxide CO₂;
- 5 (c) compressing said chilled CO₂ to a supercritical pressure;
- 6 (d) heating the supercritical CO₂ to a temperature of from about 31°C. to about
7 90°C.;
- 8 (e) transferring the heated supercritical CO₂ to said high pressure vessel;
- 9 (f) dissolving the heated supercritical CO₂ into said concentrated solution in said
10 high pressure vessel to form a sprayable liquid coating composition, and
- 11 (g) atomizing said sprayable liquid coating composition onto a substrate.
- 1 30. A method of applying a sprayable liquid coating composition to a substrate
2 comprising:
- 3 (a) forming a concentrated solution of an edible polymer and a solvent;
- 4 (b) passing heated subcritical CO₂ into a spray nozzle head;
- 5 (c) transferring said concentrated solution to said spray nozzle head, and
- 6 (d) atomizing said sprayable liquid coating composition onto a substrate.
- 1 31. A sprayable liquid coating composition comprising:
- 2 (a) forming a concentrated solution of an edible polymer and a solvent;
- 3 (b) passing heated subcritical CO₂ into a spray nozzle head;
- 4 (c) transferring said concentrated solution to said spray nozzle head, and
- 5 (d) dissolving the subcritical CO₂ into said concentrated solution in said spray
6 nozzle head to form a sprayable liquid coating composition.
- 1 32. A sprayable liquid coating composition in accordance with claim 31, wherein said
2 sprayable liquid coating composition is atomized onto a substrate.